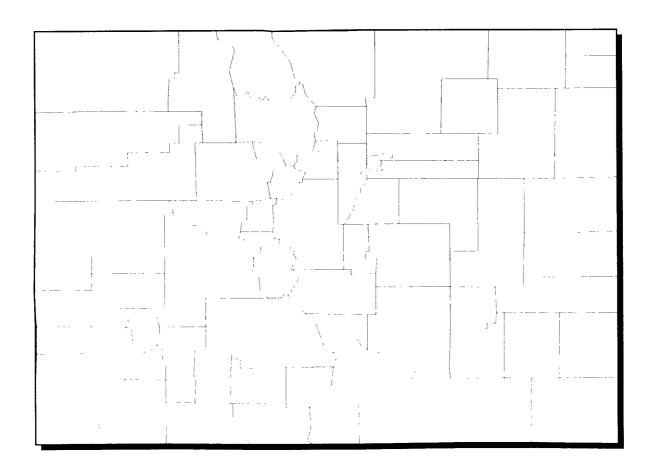


SUPERFUND:

Progress at National Priority List Sites



COLORADO 1995 UPDATE



Printed on Recycled Paper

How to Use the NPL Book

The site fact sheets presented in this book are comprehensive summaries that cover a broad range of information. The fact sheets describe hazardous waste sites on the NPL and their locations, as well as the conditions leading to their listing ("Site Description"). The summaries list the types of contaminants that have been discovered and related threats to public and ecological health ("Threats and Contaminants"). "Cleanup Approach" presents an overview of the cleanup activities completed, underway, or planned. The fact sheets conclude with a brief synopsis of how much progress has been made in protecting public health and the environment. The

summaries also pinpoint other actions, such as legal efforts to involve polluters responsible for site contamination and community concerns.

The fact sheets are arranged in alphabetical order by site name. Because site cleanup is a dynamic and gradual process, all site information is accurate as of the date shown on the bottom of each page. Progress is always being made at NPL sites, and the EPA periodically will update the site fact sheets to reflect recent actions. The following two pages show a generic fact sheet and briefly describe the information under each section.

How Can You Use This State Book?

You can use this book to keep informed about the sites that concern you, particularly ones close to home. The EPA is committed to involving the public in the decision making process associated with hazardous waste cleanup. The Agency solicits input from area residents in communities affected by Superfund sites. Citizens are likely to be affected not only by hazardous site conditions, but also by the remedies that combat them. Site cleanups take many forms and can affect communities in different ways. Local traffic may be rerouted, residents may be relocated, temporary water supplies may be necessary.

Definitive information on a site can help citizens sift through alternatives and make decisions. To make good choices, you must know what the threats are and how the EPA intends to clean up the site. You must understand the cleanup alternatives being proposed for site cleanup and how residents may be affected by each one. You also need to have some idea of how your community intends to use the site in the future, and you need to know what the community can realistically expect once the cleanup is complete.

The EPA wants to develop cleanup methods that meet community needs, but the Agency only can take local concerns into account if it understands what they are. Information must travel both ways in order for cleanups to be effective and satisfactory. Please take this opportunity to learn more, become involved, and assure that hazardous waste cleanup at "your" site considers your community's concerns.

NPL LISTING HISTORY

Provides the dates when the site was Proposed, made Final, and Deleted from the NPL.

SITE RESPONSIBILITY

Identifies the Federal, State, and/or potentially responsible parties taking responsibility for cleanup actions at the site.

ENVIRONMENTAL PROGRESS

Summarizes the actions to reduce the threats to nearby residents and the surrounding environment and the progress towards cleaning up the site.

SITE NAME STATE

EPA ID# ABC0000000



EPA REGION XX

COUNTY NAME LOCATION

Other Names:

Site Description

NPL Listing History

Threats and Contaminants -

Cleanup Approach -

Response Action Status -



NOTE AND ADDRESS ADDRESS ADDRESS ADDRESS ADDRESS ADDRESS ADDRESSORS ADDRESSOR

Site Facts: NORMAN NON NORMAN NORMANDAM NORMAN NORMANDAM NORMANDA

Environmental Progress



NORMONICA NORMONICA NORMA NORMONICA NORMA NORMONICA NORMA NORMONICANA NORMA NORMONICANA NORMONICANA NORMANICANA NORMONICANA NORMANICANA NO

Site Repository

SITE REPOSITORY

Lists the location of the primary site repository. The site repository may include community relations plans, public meeting announcements and minutes, fact sheets, press releases, and other site-related documents.



SITE DESCRIPTION

This section describes the location and history of the site. It includes descriptions of the most recent activities and past actions at the site that have contributed to the contamination. Population estimates, land usages, and nearby resources give readers background on the local setting surrounding the site.





The major chemical categories of site contamination are noted, as well as which environmental resources are affected. Icons representing each of the affected resources (may include air, groundwater, surface water, soil, and contamination to environmentally sensitive areas) are included in the margins of this section. Potential threats to residents and the surrounding environments arising from the site contamination also are described.



CLEANUP APPROACH

This section contains a brief overview of how the site is being cleaned up.

RESPONSE ACTION STATUS



Specific actions that have been accomplished or will be undertaken to clean up the site are described here. Cleanup activities at NPL sites are divided into separate phases, depending on the complexity and required actions at the site. Two major types of cleanup activities often are described: initial, immediate, or emergency actions to quickly remove or reduce imminent threats to the community and surrounding areas; and long-term remedial phases directed at final cleanup at the site. Each stage of the cleanup strategy is presented in this section of the summary. Icons representing the stage of the cleanup process (initial actions, site investigations, EPA selection of the cleanup remedy, engineering design phase, cleanup activities underway, and completed cleanup) are located in the margin next to each activity description.

SITE FACTS



Additional information on activities and events at the site are included in this section. Often details on legal or administrative actions taken by the EPA to achieve site cleanup or other facts pertaining to community involvement with the site cleanup process are reported here.

Guide to the NPL Book Icons

The "icons," or symbols, accompanying the text allow the reader to see at a glance which environmental resources are affected and the status of cleanup activities at the site.

Icons in the Threats and Contaminants Section

Icons in the Response Action Status Section



Contaminated *Groundwater* resources in the vicinity or underlying the site. (Groundwater is often used as a drinking water source.)



Contaminated Surface Water and Sediments on or near the site. (These include lakes, ponds, streams, and rivers.)



Contaminated Air in the vicinity of the site. (Air pollution usually is periodic and involves contaminated dust particles or hazardous gas emissions.)



Contaminated Soil and Sludges on or near the site. (This contamination category may include bulk or other surface hazardous wastes found on the site.)



Threatened or contaminated *Environmentally Sensitive Areas* in the vicinity of the site. (Examples include wetlands and coastal areas or critical habitats.)



Initial, Immediate, or Emergency Actions have been taken or are underway to eliminate immediate threats at the site.



Site Studies at the site to determine the nature and extent of contamination are planned or underway.



Remedy Selected indicates that site investigations have been concluded, and the EPA has selected a final cleanup remedy for the site or part of the site.



Remedy Design means that engineers are preparing specifications and drawings for the selected cleanup technologies.



Cleanup Ongoing indicates that the selected cleanup remedies for the contaminated site, or part of the site, currently are underway.

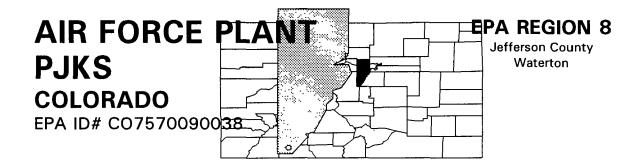


Cleanup Complete shows that all cleanup goals have been achieved for the contaminated site or part of the site.

EPA ID

Number	Site Name
CO7570090038	AIR FORCE PLANT PJKS
COD007063530	ASARCO, INC. (GLOBE PLANT)
COD000110254	BRODERICK WOOD PRODUCTS
COD980717938	CALIFORNIA GULCH
COD980717557	CENTRAL CITY-CLEAR CREEK
COD007431620	CHEMICAL SALES CO.
COD980716955	DENVER RADIUM SITE
COD081961518	EAGLE MINE
COD042167858	LINCOLN PARK
COD980499248	LOWRY LANDFILL
COD980499255	MARSHALL LANDFILL
CO7890010526	ROCKY FLATS PLANT (USDOE)
CO5210020769	ROCKY MOUNTAIN ARSENAL
COD980717953	SAND CREEK INDUSTRIAL
COD983769738	SMELTERTOWN SITE
COD980806277	SMUGGLER MOUNTAIN
COD983778432	SUMMITVILLE MINE
COD007063274	URAVAN URANIUM PROJECT (UNION CARBIDE)

COD980667075 WOODBURY CHEMICAL CO.



Site Description

The 464-acre Air Force Plant PJKS site is surrounded by approximately 4,700 acres of land owned by Martin Marietta. Since 1957, wastes generated at the facility have consisted primarily of spent solvents from equipment cleaning, contact and non-contact cooling water, and fuels discharged as a result of engine and rocket testing. Contamination from trichloroethylene (TCE), other hydrocarbons, rocket fuel components, and radiation was found in groundwater, surface water, and soils. Contamination plumes were found in two groundwater zones. Some of these plumes are moving off Air Force property and into the adjacent Martin Marietta property. Several surface contamination sources also have been identified. The facility is located in a rural area. Located nearby are major recreational areas used by local residents and visitors, including Chatfield Reservoir, Roxbury State Park, and Waterton Canyon.

Site Responsibility: This site is beir

This site is being addressed through Federal actions.

NPL HISTORY
Proposed Date: 07/14/89
Final Date: 11/21/89

Threats and Contaminants



TCE, trichloroethane, freon, thorium, and gross alpha, beta, and gamma radiation have contaminated the groundwater and soil. Brush Creek, located on the site, also contains TCE. People who directly contact or accidentally ingest contaminated surface water, groundwater, or surface wastes may suffer adverse health effects.

Cleanup	Approach
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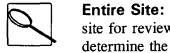
The Air Force is continuing studies to identify the extent of contamination. The Air Force will clean up the entire site using the results of these studies and, if necessary, will conduct early source removal actions to eliminate immediate threats.

Response Action Status —



Immediate Action: The Air Force's sampling revealed radiation contamination traced to buried drums. These drums, buried in 1971, contained small quantities of a low-level radioactive magnesium-thorium alloy. In 1988, the Air Force safely

removed the drums and transported them to a regulated disposal facility. In 1988, the Air Force began removing abandoned underground storage tanks and associated contaminated soils from the site. To date, 14 underground storage tanks have been removed. Uranium ore occurring naturally in the area may also contribute to the levels of radioactivity found at this site.



Entire Site: The Air Force completed a draft report of an investigation of the entire site for review by the EPA and the State. Further investigations have begun to determine the nature and extent of contamination in deeper groundwater zones. The

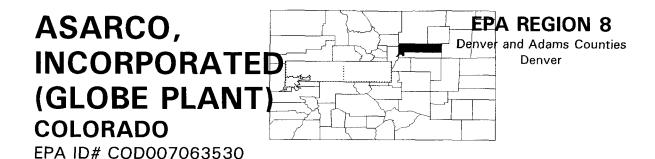
Air Force also is conducting investigations of certain surficial contamination sources and other groundwater zones. Cleanup strategies for the surface sources and groundwater contamination also are being developed.

Site Facts: The Air Force is participating in the Installation Restoration Program (IRP), a specially funded program established by the Department of Defense (DOD) in 1978 to identify, investigate, and control the migration of hazardous contaminants at DOD facilities.

Environmental Progress



The removal of contaminated drums has reduced the potential for acute exposure to hazardous materials at the Air Force Plant PJKS site while investigations are being completed.



Site Description

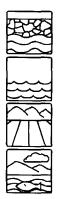
The ASARCO, Inc.'s Globe Plant site spans approximately 89 acres in Denver, Colorado. The site is located in an industrial, commercial, and residential area on the western edge of the South Platte River and is in a neighborhood referred to as Globeville. Beginning in 1986, the Globe Plant produced gold, silver, copper, and lead on site. In 1901, American Smelting and Refining Company, later named ASARCO, Inc., bought the site and converted it to a lead smelter. In 1921, ASARCO, Inc. stopped lead production and began producing arsenic trioxide, which continued until 1926. The plant was then converted to cadmium, with production continuing until 1992. The plant currently produces lead oxide and occasionally thallium, indium, and other high purity metals. Throughout site operations, runoff from the ASARCO facility would pass through an industrial ditch and enter conduits of the South Platte River. In 1974, the Colorado Department of Public Health and the Environment (CDPHE) collected water and sediment samples from the industrial drainage ditch directly west of the plant and detected elevated concentrations of cadmium, lead, and some other metals. Investigations finalized in 1992 showed that groundwater beneath and downgradient from the Globe Plant has elevated levels of cadmium. zinc, and arsenic. The contaminated groundwater plume extends as far as the South Platte River. Sediments in the industrial drainage ditch and a detention pond also contain high concentrations of metals. High concentrations of cadmium, lead, and arsenic were found in soils both on the plant site and underlying residences surrounding the plant. Nearby wetlands and fisheries 15 miles downstream of the site are also threatened by contaminated surface water that has migrated off site.

Site Responsibility:

The site is being addressed through Federal, State and potentially responsible parties' actions.

NPL LISTING HISTORY Proposed Date: 05/10/93

Threats and Contaminants



Investigations have indicated elevated levels of cadmium, lead, and arsenic in groundwater, surface water sediments, and soil at and near the site. Wetlands and fisheries within 15 miles of the site also are threatened by contaminated surface water migrating off site. Contaminated soil underlies the homes of 30 residents of nearby Globeville. People could be at risk by touching or ingesting contaminated groundwater, surface water, or soil.

Cleanup Approach —

This site is being addressed in a long-term remedial phase focusing on the cleanup of the entire site.

Response Action Status —



Entire Site: The State of Colorado and ASARCO, Inc. reached an agreement on cleanup measures for the site in 1992. These actions include: reducing toxic emissions from the ASARCO Globe Plant; monitoring emissions from the plant;

treating groundwater; cleaning ditches around plant grounds; closing a hazardous waste pile on the plant site; sampling community soils (residential, commercial and public properties); cleaning up contaminated soils that exceed health-based standards; and providing a medical monitoring program. Construction for these activities began in the spring of 1993. Site cleanup work is expected to be completed in 1997. These services are being paid for by ASARCO, Inc., with technical and administrative oversight from the Colorado Department of Public Health and the Environment (CDPHE). The EPA is currently reviewing site studies and cleanup progress to ensure that the remedy is protective of public health and the environment.

Site Facts: In December 1983, CDPHE sued ASARCO for damages to natural resources under the Superfund law. As a result of the suit, in 1987, CDPHE and ASARCO agreed to conduct joint studies to determine the extent and nature of site contamination and to characterize remaining site wastes. In July 1993, a Consent Decree between CDPHE and ASARCO was approved requiring ASARCO to implement the selected remedy at the site. Using a technical assistance grant, the community is working with the EPA to review ASARCO's work.

Environmental Progress



The EPA and State of Colorado have determined that no immediate actions are necessary while cleanup of the site continues. The medical monitoring program is now two years old, and ASARCO is entering its second season of cleaning up residential soils.

BRODERICK WOOD PRODUCTS COLORADO EPA ID# COD000110254

EPA REGION 8

Adams County Denver

Site Description

The 64-acre Broderick Wood Products site is a former wood treatment plant with two main activities that have contributed to contamination: wood treatment operations between 1947 and 1981 and railroad shops on site before 1947. The wood preserving process used creosote and pentachlorophenol (PCP) to treat power poles, fence posts, railroad ties, and other wood products. Wastes were disposed of in various locations on the property, with the majority piped to two unlined impoundments in the northwestern corner. These were called the "main" and "secondary" impoundments, and were the primary sources of contamination on the site. The main impoundment contained a surface layer of oil and grease, a water layer, and a sludge layer. The secondary impoundment held mainly sludge. The combined contents totalled about 2,200 cubic yards. No industrial activities currently take place on the site. None of the former ponds appear to have received plant wastewater, although a number of waste pits have been discovered. A water supply well on the site was abandoned in the early 1970s, but several homes to the north of the site continue to use well water. Fisher Ditch distributes water to irrigation ditches that flow to Copeland Lake, which is used for power plant cooling. Approximately 79,000 people live within a 3-mile radius of the site; 2,900 people live within 1 mile. The nearest home is 500 feet from the site. Clear Creek, a sanitary landfill, and areas where sand and gravel mining have occurred are located ½ mile to the north.

Site Responsibility: This site is being addressed through

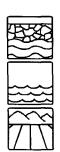
Federal and potentially responsible

parties' actions.

NPL LISTING HISTORY

Proposed Date: 09/08/83 Final Date: 09/21/84

Threats and Contaminants

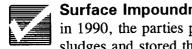


Groundwater, surface water, impoundment sludges, and soil are contaminated with various polynuclear aromatic hydrocarbons (PAHs), PCP, and volatile organic compounds (VOCs). In addition, some soil is contaminated with various heavy metals. People may incur health risks by coming into direct contact with or accidentally ingesting contaminated groundwater or soil.

Cleanup Approach

The site is being addressed through two study areas: the surface impoundment sludges; and soils, groundwater, structures, and their contents.

Response Action Status



actions were completed in 1993. The site is fenced and posted.

cleanup, is expected to be completed in the late 1995.

Surface Impoundment Sludges: Under an Administrative Order issued by the EPA in 1990, the parties potentially responsible for site contamination excavated impoundment sludges and stored them in lined impoundments. In 1992, the EPA modified the selected remedy addressing these sludges, including reclaiming and incinerating the residues. Cleanup

Soils, Groundwater, and Structures: In 1990, the potentially responsible parties began an investigation, under EPA oversight, that explored the nature and extent of pollution at and around the property. The investigation specifically targeted impoundment water, soils beneath impoundments, groundwater, surface water, surface and subsurface soils, and structures located on the site. The study was completed in mid-1991. The EPA selected a remedy for these areas in early 1992 that calls for bioremediation of soils and sediment, closure of the previously excavated impoundments, bioremediation of groundwater, reclamation of materials in tanks and containers, and demolition of contaminated structures on the site. The cleanup will be conducted in two phases. Phase I was completed in early 1994, and

included all remedies except for groundwater cleanup. Phase II, focusing on groundwater

Site Facts: The EPA signed a partial Consent Decree in 1986, requiring Broderick Investment Company to conduct a site investigation. An Administrative Order was signed in 1990, requiring the potentially responsible parties to conduct cleanup of the surface impoundment sludges. In 1992. EPA ordered the potentially responsible parties to conduct the remaining design and cleanup work. When they elected not to comply, EPA initiated the design work. A case to recover EPA's costs is now pending in federal court.

Environmental Progress



The installation of a security fence and the excavation and reclamation of the surface impoundments sludges at the Broderick Wood Products site have reduced the potential for exposure to hazardous materials and migration of hazardous substances while final cleanup of the site groundwater is underway.

CALIFORNIA GULCH COLORADO

EPA ID# COD980717938



EPA REGION 8

Lake County 100 miles west of Denver

Site Description

The California Gulch site is a 130 year old mining area covering 18½ square miles of a watershed area that drains along California Gulch to the Arkansas River. Starting in 1859, the area was mined extensively for gold, lead, silver, copper, zinc, and manganese. California Gulch collects numerous amounts of waste draining from mining, milling, and smelting operations. Miners built the Yak Tunnel to drain water from the mine works and to make mineral exploration and development easier. This tunnel drains hundreds of miles of mine workings along its 4-mile underground course and discharges approximately 210 tons of various heavy metals each year into California Gulch. Seventy-five known mills dumped tailings into over 5 miles of this area. Six impounded tailings dumps surround the nearby city of Leadville. Seventeen smelters operated at various times around the city and processed silver, lead, and zinc. Heavy metal residues are present in much of the city. Contaminated runoff flows through local town storm drains and city streets. The Arkansas River, which receives water from the California Gulch, has been classified as a recreational resource, and is heavily used for irrigation, livestock watering, public water supplies, and fisheries. Approximately 4,000 people live in nearby Leadville and Lake County.

Site Responsibility:

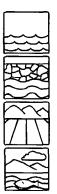
This site is being addressed through Federal and potentially responsible

parties' actions.

NPL LISTING HISTORY

Proposed Date: 12/30/82 Final Date: 09/08/83

Threats and Contaminants

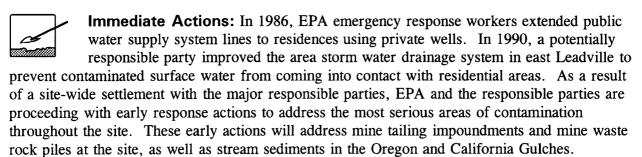


The primary contaminants of concern affecting surface water, sediments, and groundwater are the heavy metals cadmium, copper, lead, arsenic, and zinc. The water in several shallow groundwater wells in California Gulch and in some private wells has been shown to exceed the EPA's drinking water standards for cadmium and zinc. Arsenic, cadmium, and lead are present in waste piles and soils. Adverse effects on the fish population have been observed in the Arkansas River. Contaminants have degraded vegetation in pastures downstream, and some plant tissues contained levels of metals toxic to livestock and wildlife. Water in the main stem of California Gulch is unsafe to drink. Other potential threats to the health of the resident population include direct contact with contaminants in the soil.

Cleanup Approach

This site is being addressed in six stages: immediate actions and five long-term remedial phases focusing on cleanup of the Yak Tunnel, groundwater and surface water, mine waste rock and tailings, smelters and slag, and residential areas.

Response Action Status



Yak Tunnel: In 1991, the EPA modified its 1988 remedy to treat the flow of acid water from the Yak Tunnel and to prevent the uncontrolled release of tunnel drainage to the environment. The modified remedy features installing a surge pond to capture tunnel drainage and dissipate the effect of surges from the tunnel on the California Gulch and the Arkansas River, constructing a permanent system to treat the tunnel water before discharging it, installing a flow control bulkhead in the tunnel to stop the uncontrolled discharge of mine drainage, sealing shafts, drill holes, and fractured rock, and diverting surface water to reduce the amount of water entering the tunnel, establishing a surface water and groundwater monitoring system, and preparing a contingency plan. Under EPA direction, the parties potentially responsible for site contamination are designing the remedies and conducting the cleanup. The parties finished building the surge pond and filter unit in 1989 and completed the permanent treatment plant in 1992. Remaining Yak Tunnel activities are scheduled for completion by mid-1995.

Groundwater and Surface Water: Full-scale studies of surface water and groundwater began in 1991 including surface water sampling, stream-bed sampling, and toxicity testing of the California Gulch, adjacent drainages, and the Arkansas River. As part of a larger groundwater study, 56 additional monitoring wells and piezometers were installed.

Mine Waste Rock and Tailings: The potentially responsible parties began an investigation of primary waste sources from the site in 1991. The investigation is exploring the extent of lead and zinc contamination in the mine waste rock and fluvial and impounded tailings. Runoff from these sources drains into surface water and groundwater. At the completion of these investigations, the EPA will identify alternatives for cleaning up the waste.

April 1995 2 CALIFORNIA GULCH

Smelters and Slag: In 1991, the potentially responsible parties began investigations to determine the nature and extent of heavy metal releases from smelters and slag. Once the investigation is completed, expected in 1996, alternative cleanup options will be identified.

Residential Areas: In 1991, the EPA released a Preliminary Human Health Risk Assessment for the site. The EPA and the potentially responsible parties are undertaking intensive studies of the concentration of lead, cadmium and arsenic in residential soils and household dust. These and other studies will be used to define the nature and extent of contamination and resulting risk in this area of the site, as well as the best alternatives for cleanup.

Settlement Agreements: In August 1994, the EPA reached an agreement with ASARCO, Incorporated, and Resurrection Mining Company (a subsidiary of the Newmont Mining Company) to address the site. This settlement defines site areas of responsibility for each of these companies, as well as the U.S. Government. The settlement does not determine the type of cleanup work to be conducted; however, to reach agreement on the terms of the settlement, a range of possible cleanup options was considered. The final decision on the type and extent of work to be conducted will depend on the final results of the site investigations, risk assessment, detailed feasibility studies, and public input. The public will have an opportunity to comment on the results of these studies and any proposed cleanup plans during public comment periods and public meetings.

Who Pays? The terms of this settlement provide for the cost of the cleanup to be paid for by ASARCO, Resurrection, the United States, and the State of Colorado. The potentially responsible parties alleged that the United States was liable for mining operations conducted in Leadville during World War II. The potentially responsible parties also alleged that the State of Colorado Department of Transportation was liable for spreading slag fines as part of its road sanding program. To settle these alleged liabilities, the United States and State of Colorado are paying \$6.1 million and \$225,000 respectively to the potentially responsible parties to be used to address site cleanup.

Other settlements reached during 1993-1994 include:

CALIFORNIA GULCH

- ✓ ResASARCO Joint Venture paid \$8.5 million for government response costs for previous site work, including addressing contamination in the Yak Tunnel.
- ✓ Denver & Rio Grande Western Railroad paid \$1.25 million to the EPA to cover past cleanup costs and agreed to clean up certain slag piles throughout the site.
- ✓ Hecla and the United States will pay \$688,000 for cleanup of the Malta Gulch tailing impoundments.

Site Facts: ASARCO has agreed to conduct a lead risk-reduction program known as the "Kids First Program." An interim analysis of risks to children from lead is the basis for this program.

Kids First Program



The Kids First Program is intended to reduce overall lead-related risk to children in Leadville, regardless of the source of lead. This program is one of the first of its kind. It will address risks from the lead not only in soils, but also in dust, paint, and

water. Participation by residents in this program is completely voluntary. The EPA and ASARCO have also agreed to evaluate a multi-media Lead Risk Reduction Program during the feasibility study. If approved by the EPA, the Lead Risk Reduction Program may be implemented as a final remedy for the residential areas. This program would address multiple sources of lead in the community including soil, pipes, paint, and indoor dust, and would be funded by a specially-established trust fund. The Lake County Health Department, Colorado Department of Public Health and the Environment, and the public will be asked to play a significant role in the development and implementation of both the interim Kids First Program and the Lead Risk Reduction Program.

Environmental Progress



The extension of the public water supply has provided safe drinking water for affected area residents. Operation of the Yak Tunnel treatment facility in 1992 has improved water quality significantly in California Gulch and the Upper Arkansas River. Metal-contaminated sludges resulting from treatment plant operations are being shipped off site for recycling at the potentially responsible party's East Helena Smelter. This resource recovery initiative eliminates the need for sludge disposal in landfills and prevents additional pollution at the smelter through substitution of metal fluxing agents.

Site Repositories



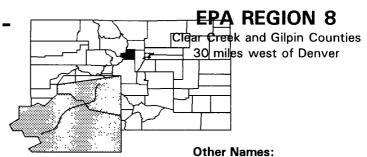
Lake County Public Library, 1115 Harrison Avenue, Leadville, CO 80461, (719) 486-0569

Colorado Mountain College, Timberline Campus Library, Leadville, CO 80461, (719) 486-2015

EPA Superfund Records Center, 999 18th Street, 5th Floor, Denver, CO 80202-2466, (303) 293-1807

CENTRAL CITY - CLEAR CREEK COLORADO

EPA ID# COD980717557



Argo Tunnel
Big Five Tunnel
Burleigh Tunnel
Central City Mining District
Gregory Incline
National Tunnel
Quartz Hill Tunnel
Chase Gulch

Gregory Gulch
Golden Gilpin Mill
Boodle Mill
Clay County Tailings
North Clear Creek
Tailings
Black Eagle Tailings
Little Bear Creek
Tailings
McClelland Tailings

Site Description

The Central City-Clear Creek site is located approximately 30 miles west of Denver, Colorado. The site boundary has not been narrowly defined because of the nature of the contamination. Extensive gold mining took place in the Clear Creek Watershed during the late 1800s. Hundreds of mine waste rock and tailings piles remain as a result of operations. In addition, numerous mine tunnels, built for ore haulage and mine water drainage, continue to drain acid water into the Clear Creek Watershed. Investigations at the site have involved identifying and prioritizing contamination within the approximately 400-square-mile drainage basin of Clear Creek. Clear Creek has three major tributaries—South, West, and North Clear Creek—as well as numerous smaller tributaries. Designated uses of Clear Creek include agricultural, recreational, and drinking water supply uses. Recreational uses in Clear Creek include fishing, kayaking, rafting, tubing, gold panning, and wildlife watching. Clear Creek and its tributaries are used in whole or in part as a drinking water source by several municipalities including Georgetown, Idaho Springs, Black Hawk, Golden, Westminster, Thornton, and Arvada. The Upper Clear Creek drainage basin is located mostly in Clear Creek and Gilpin Counties. The 1988 population estimates show 2,649 residents in Gilpin County and 7,379 residents in Clear Creek County. More densely populated areas include the towns of Silver Plume, Georgetown, Empire, and Idaho Springs in Clear Creek County, and Central City and Black Hawk in Gilpin County. Land uses in Clear Creek and Gilpin Counties include tourism, commerce, recreation, and to a limited extent, ranching and agriculture. Areas of both counties were extensively mined in the past because of the abundance of precious and base metals. Active mines are still present at some locations in the counties. In October 1991, limited stakes gaming was legalized in the towns of Black Hawk and Central City. This new industry is changing the land use and population density in these areas.

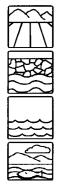
Site Responsibility:

This site is being addressed through Federal, State, and potentially responsible parties' actions.

NPL LISTING HISTORY
Proposed Date: 07/23/82

Final Date: 09/08/83

Threats and Contaminants



Soils, including tailings and waste rock, contain heavy metals such as arsenic, cadmium, chromium, copper, and lead. Children may be at risk from playing on these contaminated areas. Groundwater and surface water also contain heavy metals. People can be exposed to site contamination by drinking contaminated groundwater from private wells. The aquatic environment has been, and continues to be, severely affected by the elevated levels of metals in Clear Creek and its tributaries.

Cleanup Approach

The site is being addressed by immediate actions and three long-term remedial phases directed at cleanup of mine discharges, tailings and waste rock piles, and other areas.

Response Action Status



Immediate Actions: In 1987, the EPA built a new retaining wall to support the waste rock and tailings known as the Gregory Incline mine dump. The EPA decreased the slope of the waste pile and replaced the old retaining wall to prevent it from collapsing into North Clear Creek. In 1987, the EPA surveyed local households to determine whether residents were using contaminated water from their private wells. Of the wells tested, one showed significant levels of contamination from cadmium. The EPA provided the residents with bottled water as an interim measure until their home could be connected to the Idaho Springs municipal water supply. Additionally, EPA connected four other nearby residences to the city water supply; these wells were at risk from future contamination because they drew water from the same aquifer. The Colorado Department of Public Health and Environment conducted a second survey in 1989, and two new problem wells were identified. These wells will be addressed by future actions. In 1991, the EPA removed mercury and mercury-contaminated waste from an abandoned trailer near Idaho Springs. The mercury was

likely left over from a mine laboratory that operated inside the trailer. The trailer was an attractive place for children to play. Since limited stakes gaming was legalized in Central City and Black Hawk in 1991, the EPA has successfully negotiated five Administrative Orders on Consent with gaming developers. The orders require the developers to cleanup their property prior to the construction of casinos or casino-support facilities. Several other Consent Orders



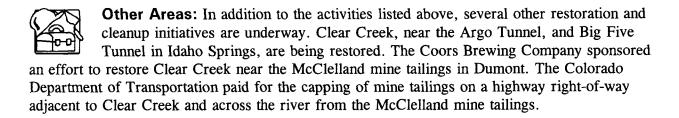
Mine Discharge Treatment of Surface Water Contaminants: The EPA and the State plan to construct a wetland passive treatment system to treat the mine tunnel discharge from the Burleigh Mine Tunnel before it reaches Clear Creek. The

Colorado Department of Public Health and Environment already has constructed a pilot-treatment system to determine the ability of passive treatment to meet water quality standards. Results have been promising. An active treatment system using chemical precipitation will be built to treat the Argo Mine Tunnel discharge. These systems are being designed to remove dissolved and suspended metals in the mine drainages and decrease the acidity of the mine drainages to meet water quality standards. In the future, the State and the EPA will consider treating other mine tunnel discharges in the Clear Creek Watershed. The technical design for this remedy is expected to be completed in mid-1995.



Tailings/Waste Rock Remediation: Erosion and stormwater control measures were completed at the Argo Tunnel and the Gregory Incline Mine Waste Piles in 1991. The majority of the Gregory Incline Tails were removed by a casino developer

in 1994. The McClelland Tailings Pile was capped in 1993 and the Black Eagle Tails were stabilized and capped in 1994. Capping or erosion control measures are now underway at several other tailings and waste rock piles. These efforts are expected to continue until 1997. The EPA, the State, and local officials are evaluating institutional measures as a means of controlling threats that future development on the tailings and waste rock piles could pose to people or the environment. Additional cleanup activities are underway to control acid mine drainage, remove contaminated sediment from the National Tunnel in Black Hawk, and replace the wetland. These activities are expected to be completed in 1995.



Site Facts: The Colorado Department of Public Health and Environment is seeking volunteers for private drinking water well testing. This will be the third such solicitation. Owners of wells contaminated with metals from mining activities will be eligible to receive bottled water and may be connected to a public water supply system.

Environmental Progress



The construction of a new retaining wall to support the waste rock and tailings has prevented further spread of contamination from the Gregory Incline Mine Dump into North Clear Creek. The EPA provided affected residences with bottled water prior to connecting them to the municipal water supply and later connected four other residences to the city water supply. Additional stabilization of tailings and waste rock piles is underway. Remedies have been chosen for the treatment of the acidic water, and the design of both systems is underway. These cleanup activities have reduced threats to the nearby population and environment while cleanup continues.

CHEMICAL SALES COMPANY COLORADO

EPA ID# COD007431620



EPA REGION 8

Denver County
2 miles northwest of Stapleton
International Airport

Other Names: Dahlia NPL Staging Area

Site Description

The Chemical Sales Company site is located in a predominantly light industrial area in northeastern Denver and covers approximately 5 square miles. The company is a wholesale distributor of commercial/industrial chemicals, detergents, and water leisure products. Operations include the storage and repackaging of bulk chemicals from rail cars and drums. A warehouse located on site has been owned and operated by the company since 1976. Surface and underground storage tanks, ranging in size from 5,000 to 15,000 gallons, were installed between 1976 and 1977. In 1981, as a result of EPA-sponsored national random sampling of drinking water, the groundwater in the South Adams County Water and Sanitation District was found to be contaminated with organic chemicals. This lead to the discovery of Chemical Sales Company as the main source of the organic chemical contamination. There have been three reported spills at the site, one of which occurred in 1985, when approximately 200 gallons of methylene chloride were spilled as a result of a spigot breaking off a tank. In 1986, the discharge of contaminated water from the company property was discovered by the Denver Fire Department. The transfer pipe gallery between the storage tanks and the loading dock had filled with runoff water. The pipe gallery was pumped into a nearby drainage ditch along the railroad tracks. The third release was a methanol spill, which occurred in 1990, when approximately 3,700 gallons of methanol were released.

Site Responsibility:

This site is being addressed through Federal, State, and potentially responsible

parties' actions.

NPL LISTING HISTORY

Proposed Date: 06/24/88 Final Date: 08/30/90

Threats and Contaminants



High concentrations of volatile organic compounds (VOCs), such as tetrachloroethylene (PCE), trichloroethylene (TCE), methylene chloride, and chloroform, were detected in groundwater samples. The EPA detected VOCs in the soil in and around the Chemical Sales Company property. Ingestion of contaminated groundwater or inhalation of vapors while using groundwater pose the greatest risks. Health risks exist for individuals who come in direct contact with the contaminated soil or groundwater. The site has been identified as a potential source of contamination of the South Adams County alluvial aquifer.

Cleanup Approach

The site is being addressed in four stages: initial activities and three long-term remedial phases focusing on controlling the source of contamination and cleanup of the groundwater, and the residential wells.

Response Action Status -

Initial Actions: In the summer of 1986, South Adams County Water and Sanitation District (SACWSD) connected its water system to a temporary treatment system to provide safe drinking water to its customers. At the same time, the EPA began connecting about 400 residences, who were using private alluvial wells for indoor purposes, to the SACWSD system. In 1987, construction began on a permanent treatment plan for the SACWSD (Klein Water Treatment Plant). This project was completed and put on line in 1989. In 1989, the EPA removed leaking and corroded drums containing contaminated soils, solvents, and liquids discovered during the EPA's investigation. Drums were removed to a federally approved disposal facility.

Source Control: Under EPA oversight, Chemical Sales initiated an investigation in 1989 to determine the source of the contamination, and to identify alternative technologies to control the sources of the contamination. The study, completed in February 1991, found that the main source of pollution is contaminated soils and recommends the following remedy: treating contaminated soils through the use of soil vapor extraction. Later in 1991, the remedy was modified to incorporate air sparging with soil vapor extraction and a pump and treat system to address the source area. The technical design for these remedies began in early 1992 and is expected to be completed in 1995.

Groundwater: The EPA initiated an investigation in 1989 to determine the extent of groundwater contamination at the site. The EPA collected groundwater samples from 80 wells in the site area. Based on the site investigation results, the EPA selected installation of groundwater extraction wells to prevent further migration of groundwater contamination and treating contaminated groundwater through the use of air stripping. The cleaned water will be reintroduced into the aquifer. Design activities for this remedy began in early 1992. The design is expected to be completed in mid-1995.

Residential Wells: In 1990, the EPA began an investigation to determine how many private well owners were using the water for drinking purposes and not hooked up to the SACWSD system. In August 1990, a Colorado Department of Health and Tri-County Health survey identified 12 residences that were using shallow wells located within contaminated portions of the alluvial aquifer. Based on the site investigations, the EPA proposed connecting the affected residences to the South Adams County Water and Sanitation District water supply system. The above residences were connected to the municipal water system in 1992. Three final residences are scheduled to be connected in mid-1995.

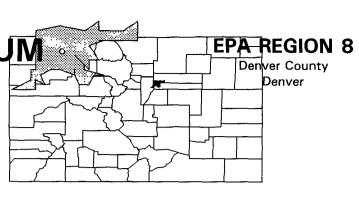
Environmental Progress



By removing drums containing hazardous materials, disposing of them at an approved facility, and securing the area, the EPA has reduced the threat of exposure to dangerous chemicals at the Chemical Sales Company site. Additionally, by hooking residences up to the municipal water system, the EPA has provided those residences with safe drinking water.

DENVER RADIUM SITE COLORADO

EPA ID# COD980716955



Site Description

Forty-nine properties in Denver are contaminated with radioactive soils and debris abandoned after the collapse of the city's World War I-era radium industry. Following the demise of the industry in the late 1920s, people soon forgot about the origin, location, and nature of the refining wastes. An EPA investigator discovered the situation in 1979 while reviewing some old documents. The State, with help from several agencies, undertook an extensive study and found 35 sites where radium had been processed, refined, or fabricated into various devices or products. The number of properties affected has since expanded to 49 in the metropolitan Denver area. These 49 properties were combined into 9 groups for clean up including: 12th and Quivas Properties; 11th and Umatilla Properties; 1000 W. Louisiana Properties; Robinson Brick Company (ROBCO) and Denver and Rio Grande Western (D&RGW) Properties; Card Property; Open Lands; Denver Streets; Shattuck Chemical Property; and ROBCO-Non-Radioactive Contamination.

Site Responsibility: This site is being addressed through

Federal, State, and a potentially responsible party's actions.

NPL LISTING HISTORY

Proposed Date: 10/23/81 Final Date: 09/08/83

Threats and Contaminants

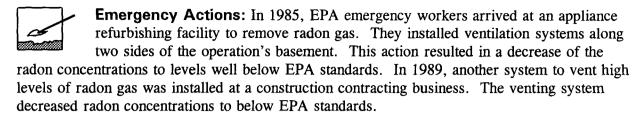


The soil is contaminated with radium, thorium, uranium, arsenic, and lead. Although the immediate threat to public health and the environment is limited, redevelopment of contaminated properties or mismanagement of the wastes could increase the risk of exposure if contaminated materials are not removed and disposed of safely. The principal threat arises from the buildup of radon gas in structures built over the contaminated soil. In addition, direct contact with the wastes may pose a health risk.

Cleanup Approach

This site is being addressed in ten stages: emergency actions and nine long-term remedial phases focusing on cleanup of the identified contamination areas and properties. Some of these separate areas contain multiple long-term remedial phases.

Response Action Status



12th and Quivas Properties: In 1987, the EPA selected a remedy for this portion of the site which included excavating the contaminated soil lying in open areas and under several structures on the properties and transporting the soil to a permanent disposal site. Cleanup activities began in 1989 and were completed in the summer of 1991. Workers removed 33,000 tons of contaminated soil and backfilled with clean soil, regrading to the original contours. Where buildings were constructed over contaminated soil, cleanup workers removed the floors to excavate underlying wastes, and then replaced the floors.

11th and Umatilla Properties: The EPA selected a remedy for the area in 1987. Features of the remedy included excavating contaminated soil from open areas and from under buildings and disposing of the contaminated material at a permanent disposal facility. The EPA has removed over 90,000 tons of contaminated material from the property and has replaced it with clean fill. All radiologic contamination from the site has been removed. Remaining lead-contaminated soils were excavated, solidified, and transported to an off-site disposal facility. This project was completed in 1993. The U.S. Bureau of Reclamation is managing the transport and disposal of all wastes from the Denver Radium site.

1000 W. Louisiana Properties: The EPA selected a remedy for this portion of the site in 1987. The remedy included demolishing the Creative Illumination building, excavating the contaminated soil remaining on the 1000 W. Louisiana properties, and transporting the contaminated material from the properties to the permanent disposal facility. Cleanup activities began in 1989, with the demolition of the contaminated brick building at 1298 S. Kalamath Street. Workers have excavated 64,000 tons of contaminated soil, and demolished one contaminated building. The EPA is leaving waste that extends under the streets in place, as it does not pose a risk. The project was completed in 1991.

ROBCO and D&RGW Railroad Properties: The EPA selected a remedy for the ROBCO property and the adjacent D&RGW Railroad property in 1986. The remedy featured removing contaminated soil from the Robinson Brick Company property and the D&RGW Railroad property, demolishing the contaminated laboratory and office buildings on the ROBCO property and removing 200 cubic yards of debris, disposing of the contaminated soil and debris at a permanent disposal facility, and continuing periodic groundwater monitoring. More than 96,000 tons of contaminated waste were excavated and disposed of safely. The clean up work was completed in 1991.

Card Property: The EPA selected a remedy for this portion of the site in 1987 which featured: excavating 4,000 cubic yards of contaminated soil and sediments from the Card property; temporarily storing this waste in reinforced synthetic bags placed inside a building at the site; possibly staging or storing wastes from other subsites on the Card property, but not more than 13,000 cubic yards total; removing all contaminated material to a permanent disposal facility; and decontaminating and dismantling the True Truss building and disposing of the material in a sanitary landfill. All plans for temporary storage of waste on the site were abandoned when a permanent disposal facility became available. The EPA began excavation and disposal of wastes in the summer of 1988 and completed these cleanup activities in the fall of 1989.

Open Lands: These properties comprise open areas throughout Denver. At these sites, contaminated soils were replaced with clean fill dirt. Over 5,000 tons of contaminated soils were removed from these properties. Cleanup of the properties was completed in early 1994.

Denver Streets: In 1986, the EPA chose a "no action" remedy for several Denver street segments where the subsurface contains contaminated paving materials. The remedy is to leave the contaminated material in place; however, a management plan governing routine maintenance, repair, and construction activities on the affected streets has been established to ensure that the area is not disturbed or developed, and that any contaminated excavated material is properly disposed of.

Shattuck Chemical Property: In 1992, the EPA selected a remedy for this portion of the site which includes: demolition of the existing facilities; excavation, treatment, and on-site disposal of an estimated 50,000 cubic yards of contaminated soils; and institutional controls to assure protectiveness of the selected remedy into the future. Cleanup activities began in 1992 and are currently on hold due to a cease and desist order filed by the City and County of Denver against the Shattuck Chemical Company. The U.S. Department of Justice, on behalf of EPA, has asked for a Federal District Court ruling to prevent enforcement of the cease and desist order. Resolution of this issue is anticipated in late 1995.

ROBCO-Non-Radioactive Contamination: During the cleanup of radioactive contamination at the ROBCO site, non-radioactive soil contamination was discovered. EPA has conducted additional investigations into the nature and extent of this contamination. EPA selected a final remedy in 1992 that consists of capping the contaminated soils with clean fill material. The cap will serve as a barrier to prevent direct exposure to the metals contamination. Design of the remedy was completed in 1992, and cleanup actions are scheduled to be completed in 1995.

Environmental Progress

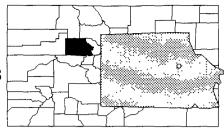


Extensive cleanup work has been completed at the Denver Radium Site, including the removal and disposal of over 310,000 tons of contaminated materials. Additionally, cleanup actions have addressed immediate sources of radon and have protected workers from short-term exposure. Additional actions are currently underway at the Denver Radium Site, which will continue to reduce sources and levels of contamination.

DENVER RADIUM SITE April 1995

EAGLE MINE COLORADO

EPA ID# COD081961518



EPA REGION 8

Eagle County 8 miles west of Vail

Other Names: New Jersey Zinc, Inc. Gilman

Site Description

The Eagle Mine site includes the Eagle Mine workings; the town of Gilman, Colorado; the mine tailings pond areas; Rex Flats; Rock Creek Canyon; and waste rock and roaster piles. This site encompasses an area of approximately 5 to 7 miles along the Eagle River. Over the last 100 years, zinc miners deposited about 10 million tons of mine wastes and mill tailings along the Eagle River. The mining conditions and wastes formed acid which leached toxic metals into surrounding surface water and groundwater. Five major sources of contamination have been identified at the site: ponds containing tailings over a total of 107 acres; roaster piles, five of which are found at this site; a 25-acre pipeline corridor that extends from Rex Flats to the new tailings pond; 12 major waste-rock piles that cover about 93 acres; and seepage from the flooded mine. The closest residence to the Eagle Mine site is located approximately 1,000 feet to the northwest. Minturn, the closest population center, has 1,500 people, and its filter ponds and municipal wells lie 2,000 feet to the northwest of the mine tailings and across Cross Creek. Minturn draws its public water supply both from area wells and from Cross Creek. A middle school is located only 400 yards from the largest tailings pile.

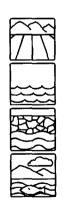
Site Responsibility: This site is being addressed through

Federal, State, and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 10/15/84 Final Date: 06/10/86

Threats and Contaminants



Soil, surface water, and groundwater below the tailings piles and the now-flooded mine contain various heavy metals including arsenic, cadmium, chromium, copper, lead, and zinc. Fish populations have declined in the reaches of the river next to and below mine waste areas. Water from two town wells located near the site could be threatened. Wind-blown particulates from the tailings pile are of concern because of the proximity of a middle school. Maloit Park is a wetland area located adjacent to the New Tailings Pile and has been affected by surface water and groundwater flowing from the pile and from mass wastage spreading from the pile.

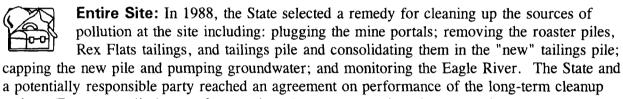
This site is being addressed in three stages: initial/emergency actions and two long-term remedial phases focusing on cleanup of the entire site and the soils.

Response Action Status



Initial/Emergency Actions: Between 1976 and 1979, the mine owners undertook early cleanup activities such as treating mine water, revegetating small test plots located in the Rex Flats and old tailings pond areas, and building surface water diversion ditches along the old and new tailings ponds. Workers removed about half the tailings

deposited on Rex Flats and built a surface runoff ditch. They also built a seepage collection pond and a sump and liming facility between the old tailings pond and the Eagle River. Around 1983, when the mine was abandoned and the pumps were turned off, the mine began to flood. Transformers containing polychlorinated biphenyls (PCBs), located in the mine shaft, posed a threat if flooded. EPA emergency workers removed the transformers from the shaft, secured and stored them on site as usable products, and supplied the electricity needed to run the pump and water treatment systems while the salvage operations were underway. The EPA also built dikes in the mine to divert water from the upper mine areas and to prevent the water's release.



action. To prevent discharge of contaminated water to the river from the mine, the former owners built five concrete bulkheads in mine openings. Under State supervision, the former mine owners plugged the mine and reworked many millions of cubic yards of mine tailings. They have consolidated most of the wastes from the roaster piles, Rex Flats, and the old tailings pile into the new tailings pile. In early 1990, however, it became apparent that problems had developed with the ongoing cleanup. Mine seepage, a failed groundwater pump-back system, and run-off from various tailings areas were discharging a large quantity of metals into the Eagle River. In 1990, the State and the potentially responsible party agreed to locate a water treatment plant on site and to collect and treat visible mine seepage and consolidated pile groundwater. In the fall of 1992, the EPA evaluated additional cleanup measures and decided on a remedy in March 1993. The measures included further collection of Eagle Mine seeps, accelerated revegetation, and additional monitoring. The EPA also created more stringent cleanup standards for the Eagle River.

Soils: In late 1991, an investigation began to explore the nature and extent of contaminated soils at the Eagle Mine site. The study was completed in late 1993. Soil metals levels were found to be of no concern in Minturn and the Middle School area. Levels are elevated on the Maloit Park wetlands and in Gilman. A remedy for the soils area of the site is expected to be selected soon.

Site Facts: Under a 1994 Unilateral Administrative Order, the EPA directed the potentially responsible parties to remove soils in Maloit Park, renovate the groundwater extraction trenches, develop plans for restoring the wetlands, monitor and analyze run-off from waste rock areas, and collect additional mine seepage. The remainder of EPA's selected remedy that calls for biologically based in-stream standards is expected to be addressed through a Consent Decree which is nearing finalization.

Environmental Progress



The EPA has taken emergency actions at the Eagle Mine site to remove the PCB-laden transformers and to construct dikes to prevent the further spread of contamination. The EPA and the State also removed a large quantity of hazardous materials from Gilman and Eagle Mine. To date, most of the tailings and roaster pile material has been consolidated at the new tailings pile, which is 80 percent capped. A groundwater extraction system is operational, and the mine is plugged and nearly completely flooded. Water drainage treatment and river impact monitoring will continue while long-term cleanup actions and additional site investigations are underway to protect the Eagle River from contaminated runoff from the site.

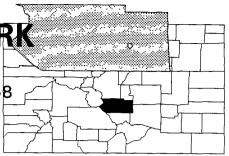
Site Repository



Town Clerk's Office, Minturn Town Hall, 302 Pine Street, Minturn, CO 81645



EPA ID# COD042167858



EPA REGION 8

Fremont County Canon City

Other Names: Uranium Mill Cotter Corporation

Site Description

Beginning in 1958, the Cotter Corporation operated a uranium mill approximately 1½ miles from the community of Lincoln Park, Colorado. Mill operations caused the release of radionuclides and heavy metals into the environment. Contaminants migrated through the groundwater to Lincoln Park prior to the construction of a dam on Sand Creek. Drinking water wells in the impacted area have been abandoned and residents have stopped using groundwater for domestic purposes. These homes have been connected to the Canon City water supply; however, some individuals in Lincoln Park are still using groundwater for irrigation purposes. The Lincoln Park area has approximately 3,500 residents.

Site Responsibility:

This site is being addressed through Federal, State, and potentially responsible

parties' actions.

NPL LISTING HISTORY

Proposed Date: 09/08/83 Final Date: 09/21/84

Threats and Contaminants



Groundwater underlying the mill area and the community of Lincoln Park is contaminated with uranium, molybdeum, and other radionuclides. Soils in the mill area also are contaminated with similar uranium products. Drinking or otherwise coming into contact with contaminated well water or soil may cause adverse health effects. Wind-blown contaminants and contaminants in surface streams also pose potential threats.

Cleanup Approach
This site is being addressed in a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Entire Site: In 1988, the State selected a remedy to clean up the site by: connecting area residences to an alternate water supply; pumping and treating the groundwater above the dam on Sand Creek to remove the contaminants; flushing the contaminants

out of the water below the dam; revegetating the site; implementing air quality controls; and stopping off-site groundwater migration. Area residences have been furnished with a safe drinking water supply. A pilot groundwater treatment system has been completed. A risk assessment of the site was completed in 1992 to determine the effectiveness of the selected cleanup remedies; soil, vegetation, and sediment sampling is continuing. To date, the Cotter Corporation has contained the contaminants from the uranium mill by using a groundwater cut-off barrier and by pumping the water back into holding ponds. The company is currently designing the final technical specifications for the selected remedies, scheduled to be completed by 1996. Cotter Corporation has sampled soils in the Sand Creek drainage basin on site and is scheduled to remove contaminated soils and place them in the main impoundment during 1995.

Site Facts: In 1988, the State and the Cotter Corporation signed a Consent Decree, under which the Cotter Corporation agreed to implement a remedy to clean up the contamination at the site. In addition, in 1988, a Memorandum of Understanding was signed between EPA and the State, giving the State a lead role in overseeing clean up of the site. Currently, the State, EPA and Cotter Corporation are participating in a Total Quality Environmental Management program to resolve technical issues with the design of the remedy for the site.

Environmental Progress

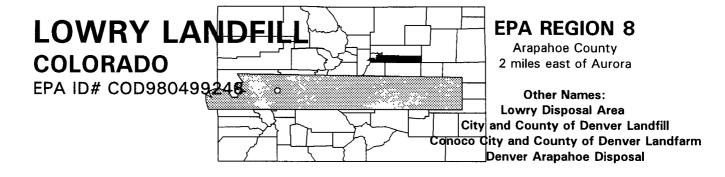


Residences near the Lincoln Park site have been furnished with a safe drinking water supply. A pilot groundwater treatment system project has been completed and containment measures have been taken at the site to prevent uranium-contaminated groundwater from migrating off the mill site. Cotter voluntarily cleaned up a railroad depot site under EPA and State oversight in Canon City where spillage had occurred. Another railroad spill clean up at Prospect Street is underway.

Site Repository



Canon City Library, 516 Macon Avenue, Canon City, CO 81212 Colorado State Attorney General's Office EPA Superfund Records Center



Site Description

The Lowry Landfill covers approximately 400 acres near Aurora, Colorado, a suburb of Denver. It is estimated that approximately 138 million gallons of liquid industrial wastes were dumped into about 65 unlined trenches or pits from 1966 until 1980. These wastes included sewage sludges, metal plating wastes, petroleum-derived products, pesticides, and industrial solvents. Municipal refuse was added to the pits to soak up the liquids. This industrial waste disposal method (known as co-disposal) was discontinued in 1980. Beginning at that time, the landfill accepted only solid waste for disposal. In addition to the industrial wastes at the site, approximately 8 million tires were stockpiled in the 1970s in the hope that they might be recycled as a source of fuel or other raw material. Over the years, the wastes have migrated into the ground water and surface water. The area around the site is zoned for future industrial, commercial, and residential development. The population within 1 mile is less than 500 people. Approximately 5,000 people live within 3 miles of the site.

Site Responsibility: This site is being addressed through

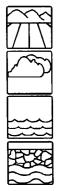
Federal and potentially responsible

parties' actions.

NPL LISTING HISTORY

Proposed Date: 09/08/83 Final Date: 09/21/84

Threats and Contaminants



Landfill solids, landfill gas, soils, sediments, and shallow ground water contain one or more organic or inorganic contaminants. Although the shallow ground water is contaminated, it is not used as a drinking water source. However, the potential exists for the contaminants to migrate into the deep ground water, which is a source of drinking water in the vicinity of the site. EPA has determined that the site does not pose any immediate risks to human health.

Cleanup	Approa	ch
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The site has been addressed through initial actions and a long-term cleanup approach focusing on sitewide cleanup.

Response Action Status



Initial Actions: In 1984, the City and County of Denver built an underground barrier wall and treatment system. The wall functions as a dam to contain and collect shallow ground water, which is pumped into storage tanks and piped to an on-site

plant for treatment. The treated water is discharged into an underground gravel drain off site, where it slowly seeps into the ground water. In 1989, Waste Management of Colorado, Inc. (WMC), under contract with Denver, began shredding and storing discarded tires that were stockpiled at the site. The shredding operation was completed in the spring of 1992. In 1990, the EPA bulked and removed drums containing wastes, and treated the liquids in the on-site treatment plant. In 1992, WMC completed the construction of a collection and treatment system to prevent contaminated surface water from flowing off site. This system was put into full-scale operation in early 1993. In the fall of 1994, Denver, WMC, and Chemical Waste Management, Inc. (CWM) received approval from EPA and the Colorado Department of Public Health and Environment to dispose of solid and liquid wastes that were stored on the command post drum storage pad. Disposal of these wastes was completed in early 1995. Approximately 4,217 drums of waste were disposed of in accordance with all pertinent environmental regulations.



Sitewide Remedy: In early 1994, the preferred alternatives for cleaning up each environmental media (ground water, landfill gas, landfill solids, soils, surface water, and sediments) were combined to form the selected sitewide remedy. The selected

remedy includes: extraction and treatment of contaminated ground water and leachate; collection and treatment of contaminated landfill gas; monitoring of all environmental media; placement of an additional cover on the north face of the landfill mass; and excavation, treatment, and disposal of contaminated solids (including drums, drum contents, and contaminated soils) in the former tire pile area. The design of cleanup remedies began in early 1995 and is scheduled for completion in 1996.

Site Facts: To date, there have been two *de minimis* (small party) settlements in which EPA collected a total of \$1,287,360.78. Also, there have been four bankruptcy settlements in which \$6,970,000 were collected. In 1994, the EPA issued a Unilateral Administrative Order that required the 34 potentially responsible parties to perform the design of the remedy and implement the cleanup activities. On January 17, 1995, Denver, WMC, and CWM submitted a notice of intent to comply with the Order. Denver, WMC, and CWM submitted this response on behalf of themselves and 21 other potentially responsible parties, all of whom had previously entered into private settlements with Denver, WMC, and CWM.

April 1995 2 LOWRY LANDFILL

Environmental Progress



The existing underground ground water barrier wall at the northern site boundary restricts contaminated ground water from migrating away from the site. Contaminated ground water currently is collected at the barrier wall and pumped to an on-site treatment plant. These activities, in addition to the removal of drums and other wastes at the Lowry Landfill site, have reduced the potential of exposure to site contaminants while final site cleanup remedies are being designed.

MARSHALL LANDFII COLORADO

EPA ID# COD98049925



EPA REGION 8

Boulder County Town of Marshall

Site Description

The Marshall-Boulder Landfill, covering 160 acres, is located ¼ mile south of Colorado Highway 170 and is bounded on the east by South 66th Street. Marshall Reservoir is located upstream of the site, about 2,000 feet to the west. The site comprises two 80-acre sections that were operated as a landfill until December 1991. Between 1965 and 1974, the landfill accepted unstabilized sewage sludge and many unidentified and potentially hazardous wastes. Septic wastes, and possibly liquid industrial wastes, also were disposed of off site in two septic ponds. The ponds are now closed. In 1981, landfill leachate was observed seeping into the community ditch that carried drinking water from the nearby Marshall Lake to the City of Louisville, and that also conveyed irrigation water for downstream ranchers.

Site Responsibility:

This site is being addressed through

Federal and potentially responsible

parties' actions.

NPL LISTING HISTORY

Proposed Date: 07/23/82 Final Date: 09/08/83

Threats and Contaminants



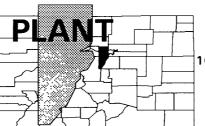
Volatile organic compounds (VOCs) and inorganic chemicals have been detected in the groundwater both on and off site and in surface waters on site. Drinking contaminated groundwater could present a health threat to individuals.

Cleanup Approach
Response Action Status ————————————————————————————————————
Initial Actions: In 1984, Landfill, Inc. installed a 60-inch pressurized pipeline to protect local drinking water supplies by transporting the water across the landfill.
Groundwater and Surface Water: The selected groundwater and surface water cleanup remedies to address VOC and inorganic chemical contamination include: fencing, regrading, and planting of the northern portion of the inactive landfill; installing a groundwater collection and treatment system (allowing some contaminants to settle out, exposing the groundwater to air to allow organic contaminants to evaporate, chemical treatment to remove metals, and recapturing the contaminants in a carbon filter before releasing to the air) and discharging the treated water to Cowdery Drainage; monitoring groundwater and surface water; and implementing landfill improvements including regrading, revegetating, digging of perimeter ditches, and installing fences. The potentially responsible parties, under EPA oversight, completed construction of the water treatment plant and groundwater collection system in the spring of 1993. Site Facts: Under an Enforcement Order in 1984, Landfill, Inc. installed a pressurized pipeline to protect drinking water supplies. The EPA negotiated Consent Decrees with the potentially responsible parties, including the City of Boulder, Landfill, Inc., and the Cowdery Company, to perform the cleanup actions.
Environmental Progress ———————————————————————————————————

All construction is complete and a water treatment plant is now treating contaminated groundwater, ensuring the ongoing reduction of risk to public health and the environment.

March 1995 2 MARSHALL LANDFILL

ROCKY FLATS PLAN (USDOE) COLORADO EPA ID # CO7890010526



EPA REGION 8

Jefferson County

16 miles northwest of Denver

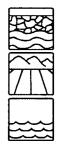
Site Description

The Rocky Flats site covers approximately 6,500 acres of United States Department of Energy (USDOE) land. Originally established by the Federal government in 1951, the facility currently is under contractor management. Rocky Flats has produced plutonium triggers for the USDOE nuclear weapons programs. Site operations have included recovering and reprocessing plutonium from old weapons and manufacturing residues, performing laboratory research, and manufacturing weapon parts from "high-tech" metals. In 1989, Rocky Flats was investigated by the EPA, the Department of Justice (DOJ), the FBI, and the DOE Inspector General for violations of environmental statues. Plutonium operation was suspended at that time. In 1992, the mission changed from defense production to environmental restoration, waste management, and economic conversion. Rocky Flats presently stores hazardous waste, and houses the largest plutonium inventory in the country. In February 1993, USDOE received approval to restart Building 707 for stabilization of plutonium residues. Site contaminants have spilled onto the ground and into water supply drainages. The USDOE identified over 2,000 waste streams that the production processes generated at the site. Other major environmental concerns at the site encompass 178 identified disposal areas resulting from past waste management practices, including a series of evaporation surface impoundments, old process pipelines and underground tanks, aqueous spray irrigation fields, two on-site landfills, leaking drum storage areas, and several disposal trenches. USDOE has recently identified another 79 areas of concern, which will be incorporated into investigations administered through the clean up agreement with the EPA. Over 2 million people live within 50 miles of Rocky Flats; over 300,000 live within 10 miles.

Site Responsibility: This site is being addressed through Federal actions.

ough Proposed Date: 10/15/84
Final Date: 10/04/89

Threats and Contaminants



Groundwater contains various volatile organic compounds (VOCs), radionuclides, and heavy metals. Soil and surface water are contaminated with plutonium, uranium, and americium. Shallow groundwater in the southern section of the site (the Hillside area) and the eastern section of the site (the 903 Pad, East Trenches, and Mound Areas) are contaminated with high levels of VOCs. Air could potentially become contaminated with radioactive plutonium, uranium, and americium. People could be exposed to chemicals on site by touching, inhaling, or ingesting contaminants in soil, air, groundwater, and surface water.

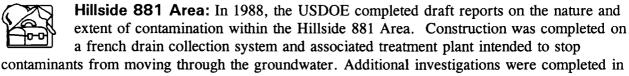
Cleanup Approach

This site is being addressed in multiple stages: interim actions and a total of 16 long-term remedial phases focusing on addressing contamination at the Hillside 881 Area; the 903 Pads, East Trenches, and Mound Areas; Off-site Releases; Solar Ponds; Woman Creek; Walnut Creek; Present Landfill; Original Process Waste Lines; Low priority Areas; 700 Area, Other Outside Closures, West Spray Field, 400/800 Area, 100 Area, Radioactive Sites, and Inside Building Closures.

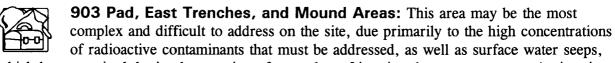
Response Action Status



Interim Actions: In 1987, the USDOE removed more than 20,000 cubic yards of sludge from evaporation ponds. The removed sludge has become a source of problems for USDOE. USDOE has dewatered the ponds through the implementation of an interim response action for the solar ponds. Several additional interim actions have been approved for this site. These actions will be undertaken in the near future.



early 1990 that included drilling and sampling of soil, water, air, and biota. The USDOE began treating the groundwater in early 1992.



which have required the implementation of a number of interim cleanup measures. An interim remedy was selected in early 1991 which consisted of a surface water collection and treatment system. This system is presently operating. Additional sampling and analysis began in mid-1991 on soil, sediments, water, and biota. A second interim measure has been developed, approved, and is being implemented to address potential releases from this area of the site to an adjacent drainage. The second interim measure has successfully demonstrated the viability of using soilvapor extraction to treat VOC-contaminated soils and groundwater.

Off-site Releases: These areas consist of two reservoirs that are used as drinking water supplies for approximately 250,000 people, a third irrigation reservoir, and land used for recreational and agricultural purposes. The USDOE conducted two preliminary risk studies that have been used to focus the investigation of these areas. An investigation work plan was submitted in mid-1991 and has been approved. The investigation is currently underway and scheduled to be completed in 1999.

Solar Ponds: An interim cleanup action was selected in 1992, which includes the construction of storage tanks and a water distillation unit to dewater/desludge the pond. These actions were completed in 1993. A draft interim plan for in-place closure of the ponds was recently submitted for review. A groundwater collection system continues to operate.

Woman Creek: This area encompasses the stream, two ponds on the stream, and a number of disposal sites within the basin including an abandoned landfill, disposal trenches, and former waste storage areas. The drainage basin receives surface water flows and groundwater seepage from contaminated and active industrial areas of the site, which potentially could affect downstream surface water supplies. An investigation work plan has been submitted and approved. Field work began in late 1992 and the first phase of the investigation has been completed.

Walnut Creek: The Walnut Creek area encompasses the stream; numerous ponds; disposal areas including an active landfill, disposal trenches, and surface impoundments; and former waste storage areas. The drainage basin receives surface water flows and groundwater seepage from contaminated and active industrial areas of the site, which potentially could affect down stream surface water supplies. A work plan for an investigation was submitted and approved. Field work began in late 1992 and has been completed for the first phase of investigation.

Present Landfill: This area of the site comprises a large, active landfill that has been in use for over 20 years. It once was enclosed by a groundwater diversion and seepage collection system, but the system has since been abandoned and is partially destroyed. DOE is expected to propose an interim cleanup action detailing the presumptive remedy for the landfill.

Original Process Waste Lines: This area consists of an underground network of old process waste lines that were used to pipe wastes to the surface impoundments or discharge points. A preliminary work plan for an investigation of these poorly mapped lines was submitted and has been approved. Field work was delayed, but the investigation is expected to be completed in mid-1996.



Low Priority Areas: Because levels of contamination at the low priority areas were found to be within established health standards, no further action is anticipated at these areas.

Other Areas: Eight separate investigations will be conducted to determine the nature and extent of contamination. These areas include the 700 Area, Other Outside Closures, West Spray Field, 400/800 Area, 100 Area, Radioactive Sites, and Inside Building Closures. Investigations are in various stages of development for these areas.

Site Facts: In January 1991, the EPA, the DOE, and the State signed a Rocky Flats Interagency Agreement (IAG) to guide environmental restoration at the site under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), and the Resource Conservation and Recovery Act (RCRA). The State also issued DOE a RCRA permit for handling hazardous wastes, incorporating all the substantive requirements of the IAG. In May 1991, a Federal Facility Compliance Agreement was signed to achieve compliance with land disposal restrictions. In May 1992, an amendment was signed extending the provisions of the Federal Facility Compliance Agreement to include "Third Third" Mixed Wastes. In May 1993, this Federal Facility Compliance Agreement was terminated in anticipation of a State lead agreement. In light of the change in mission at Rocky Flats, the EPA, the DOE, and the State began negotiations in March 1994 for a new Rocky Flats Cleanup Agreement, intended to replace the existing IAG. The parties anticipate that the Rocky Flats Cleanup Agreement will broaden the scope of cleanup to include decontamination and decommissioning of buildings and to ensure that implementation problems being experienced in the existing IAG will not occur again. The parties also anticipate that the Rocky Flats Cleanup Agreement will result in overall cost savings through increased cooperation between DOE and the regulators, and through DOE initiatives to streamline many of its internal procedures. To evaluate reuse of its facilities, DOE has initiated the National Conversion Pilot Project (NCPP) at Rocky Flats. The mission of the NCPP is to "explore and demonstrate, at the Rocky Flats site, the feasibility of economic conversion at Department of Energy facilities." Under this program, a private company, Manufacturing Sciences Corporation, has proposed to use four Rocky Flats buildings, equipment, and up to 500 displaced or potentially displaced workers to recycle scrap metals (including depleted uranium and beryllium) into a variety of waste containers for DOE using environmentally-conscious manufacturing methods. A comprehensive public involvement program will ensure the participation of stakeholders.



Numerous actions and investigations currently are underway at the Rocky Flats Plant. The cleanup of contaminated groundwater resources at the site has begun, and further cleanup activities are planned that will eliminate the potential for exposure to hazardous substances at diverse areas of the site.

ROCKY MOUNTAIN ARSENAL COLORADO

EPA REGION 8

Adams County

10 miles northeast of downtown Denver

Other Names: Shell Chemical Company Shell Oil Company

Site Description

EPA ID# CO5210020769

The 17,000-acre Rocky Mountain Arsenal site is a facility owned and operated by the U.S. Army. Hazardous wastes have been deposited on about 1,750 acres of the site. The facility was established in 1942 and has been used by both government and industry to manufacture. test, package, and dispose of various chemical products, chemical warfare agents, and munitions, including rocket fuels, herbicides, pesticides, nerve gases, mustards, and incendiary munitions. In 1947, portions of the site were leased to a chemical manufacturing company, Colorado Fuel and Iron Corporation, for the manufacture of chlorinated benzenes and the pesticide DDT. Shell Chemical Company later assumed the pesticide and herbicide manufacturing operations. Munitions and pesticide operations over 40 years led to spills and the disposal of more than 750 different hazardous wastes in several areas. Industrial effluents routinely were discharged to unlined evaporation basins. Solid wastes, including munitions, were buried at various locations. Spills of raw materials and final products occurred within the manufacturing complexes. All production operations ceased in 1982. Investigations by the Army have identified at least 178 on-post areas as being potentially contaminated with hazardous wastes. Basin F, which is closed, formerly held as much as 240 million gallons of liquid wastes. In 1988, the 10.5 million gallons of Basin F liquids which remained were then stored in three lined tanks and a double-lined surface impoundment. An incinerator operated between March 1993 and July 1995 successfully destroyed the contaminated liquid. 564,000 cubic yards of Basin F solids are in a double-lined, capped waste pile. Five unlined basins received wastes before Basin F was built. The site also contains two major industrial complexes that produced the pesticides, nerve gas, and mustard gas. Shallow groundwater is contaminated, as is the deeper aguifer to a much less extent. 353 abandoned wells have been plugged. Seven groundwater intercept systems - and an eighth system north of the Arsenal - have been installed to remove shallow aquifer contaminants and treat one billion gallons of water a year. Three plumes of contaminated groundwater migrated off site before the intercept systems were installed, with one eventually near the South Platte River at very low levels. A surface stream offpost receives some contaminants from ground water discharge. The South Adams County Water and Sanitation District (SACWSD), created in 1953, supplies approximately 30,000 customers with treated water; its state-of-the-art water treatment system was constructed with Army and EPA funds. Two environmental justice communities are adjacent to the site. Community involvement is intensive. Final remedies for the contaminated soils, structures, and groundwater will be selected in 1996.

Site Responsibility:

This site is being cleaned up through actions of Federal, State, and potentially responsible parties.

NPL LISTING HISTORY

Proposed Date: 10/15/84 Final Date: 07/22/87 Site Facts: In 1982, the EPA initiated a Memorandum of Agreement (MOA) with the Army, the State, and Shell Chemical Company, a potentially responsible party, requiring the exchange of information and participation in the development and implementation of response actions at the Arsenal. In 1989, Shell, the Army, the Department of Interior, the Agency for Toxic Substances and Disease Registry, the Department of Justice, and the EPA signed a Federal Facility Agreement. The new agreement superseded the MOA, apportioned liability between Shell and the Army, established several initial remediation actions, and resolved the Army-Shell litigation. In 1992 Congress passed legislation to make the Arsenal a National Wildlife Refuge after EPA certifies that the cleanup is complete. The U.S. Fish and Wildlife Service manages the wildlife and habitat at the Arsenal. After lengthy litigation against the U.S., the State of Colorado established its RCRA authority for at least Basin F.

Environmental Progress



Several initial remediation actions have been performed, as described below. The end of production, some initial remediation actions, the provision of alternative water supplies, and onpost access restrictions have reduced the potential for exposure to contamination. CERCLA studies and further cleanup actions are being performed. Further reduction of potential exposure threats and selection and prompt implementation of final remedies are top priorities.

Threats and Contaminants





Groundwater is contaminated with various volatile organic compounds (VOCs), pesticides, heavy metals, and products from warfare agents. Sediments from lakes and drainage areas are contaminated with heavy metals and pesticide residuals. Soils are contaminated with heavy metals including arsenic, lead, and mercury; pesticides, and VOCs. The health threats associated with this site include inhaling contaminated dust and touching or ingesting contaminated soils. No one lives onpost, but the many affected homes nearby have been hooked to a water treatment system or provided bottled water.

Cleanup Approach

This site is being managed in stages: many initial actions and long-term remedial phases focus on the contamination. After extensive public involvement on remedy options, in June 1995 the parties negotiated a conceptual remedy for all onpost and offpost issues. That concept will be the preferred alternative in the Onpost Proposed Plan. After consideration of formal public comment, the Onpost ROD is expected in spring 1996. The Offpost ROD is expected in fall 1995. The initial actions described below must be consistent with the final remedy and included in those RODs.



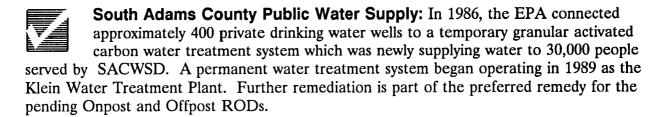
Site Contamination: Offpost and onpost studies investigated the nature and extent of contamination, plus alternatives for final cleanup.

Response Action Status



Earliest Initial Actions: The Army installed the North Boundary Groundwater Treatment System in stages between 1979 and 1982. Shell Oil Company installed the Irondale Groundwater Treatment System in 1981. The contaminated sewer

connected to Basin F was removed in 1982. In 1984, the Northwest Boundary Groundwater Treatment System was completed. Over 76,000 drums of waste salts were removed in 1986. A 12,045-foot-deep hazardous waste injection well was closed in 1986. Later initial actions are described below.



Basin F and Basin A Groundwater, and Hydrazine Facility: Groundwater Intercept and Treatment Systems North of Basin F and at Basin A Neck are in operation; final remedies are pending. Destruction of 300,000 gallons of liquid wastes at the hydrazine facility, and cleanup/dismantling of that facility, plus closure of the sanitary sewer, have been completed. Reapplication of wind-blown dust control occurs every 2 to 3 years. Massive asbestos removal continues since 1989.



South Tank Farm Plume: This plume is monitored for possible plume movement and natural biodegradation. The final remedy will be part of the 1996 Onpost ROD.



Offpost Groundwater Intercept and Treatment System: This groundwater system, north of the Arsenal, began operation in 1992 and will be part of the 1995 Offpost ROD.



Abandoned Wells: A total of 353 abandoned wells onpost were sampled, closed, and plugged in 1990, to prevent their potential to channel contamination to lower aquifers.



Basin F Liquids and Sludges: Basin F was closed in 1989. Approx. 10.5 million gallons of liquid and 564,000 cubic yards of contaminated sludges were removed to temporary storage. The final remedy for sludges will be in the 1996 Onpost ROD.



Basin F Liquids: A "submerged quench incinerator" (SQI) was constructed in 1991-3 to treat the liquids; it operated between 3/93 and 7/95. Metals in incineration residues were recycled offsite, then the resulting safe liquids were discharged.



Contaminated Liquids in the Building 1727 Sump: Treatment of the sump liquids continued through 1993.



Wastewater: Operation of a treatment plant for wastewater resulting from other cleanup actions began in late 1992.



M-1 Ponds, Lime Basins, Motor Pool, and Rail Yard: A vitrification system selected for the M1 Ponds was cancelled. Since 1992, operation and maintenance are ongoing for the Motor Pool Area vapor extraction system, the Lime Basins containment system, and the Rail Yard groundwater intercept and treatment system. Final remedies will come in 1996.



Army Trenches: A monitoring program is ongoing, with annual re-evaluation to determine if further action is necessary. The final remedy will be in the 1996 ROD.



Shell Trenches: Construction of the temporary containment system, which consists of a slurry wall and cap, was completed in 1991. The 1996 ROD will have the final remedy.



Chemical Process Related Equipment: Decontamination of the production era equipment, piping, and containers began in 1992 and continues, much is recycled.



Contaminated Soils and Structures: Massive contamination remains, such as in Basin A and the South Plants. In the fall of 1995, a Proposed Plan will present for formal public comment the June 1995 negotiated preferred remedy. The Onpost ROD is expected in 1996.

Adjacent NPL Sites: The investigation determining the nature and extent of contamination of an offpost area, south of 86th Avenue, affecting the SACWSD, continues under the jurisdiction of the Chemical Sales Company NPL Site. Two other NPL sites and other sources of ground water contamination are south and southwest of RMA.

Site Repository



Joint Administrative Document Facility (JARDF) Room 14, Arsenal Security Building 72nd and Quebec Streets, Commerce City CO 80022 (303) 289-0362

For EPA answers to questions about the Arsenal, call Mr. Pete Peterson, Community Relations Coordinator at EPA, (303) 294-1130, or Mr. Michael Holmes, (303) 294-1141.

SAND CREEK INDUSTRIAL **COLORADO**

EPA ID# COD980717953

EPA REGION 8

Adams County Commerce City

Other Names: L C Corporation

Colorado Organic Chemical Company Holly & 48th St. Landfill

Browning Ferris/Globe Chemical Colorado International Corporation Private Brands Western, Inc.

Site Description

The 550-acre Sand Creek Industrial site consists of four known sources of contamination, all of which are currently inactive: the Oriental Refinery, the Colorado Organic Chemical property, the L.C. Corporation acid pits, and the 48th Street and Holly Landfill. The site's 25-year history includes a fire that destroyed the refinery, a major spill of refined petroleum, two methane explosions which killed two men and injured others, an incident in which livestock were severely burned when they wandered into acid pits, and a fire at the pesticide formulator that released fumes over northeast Denver and resulted in several firemen being hospitalized. The Oriental Refinery is a former oil refinery and consists mostly of rubble. The site is now occupied by a propane distributing firm and a gas station. The Colorado Organic Chemical plant originally manufactured pesticides in the 1960s. Since 1968, when a fire destroyed three of the buildings on site, several health agencies have found unacceptable conditions at the plant. These conditions have included unsatisfactory waste management practices and worker safety conditions, violations in storage and handling of flammable liquids, and soil containing high levels of pesticides and other chemicals. A second fire occurred at the plant in 1977. The L.C. Corporation hauled and disposed of approximately 8,000 tons of acid waste in pits. Lime was added to neutralize the acid and the pit area was covered. Acid was found to be seeping from the pits into Sand Creek in 1976. In 1980, L.C. Corporation covered the seepage with clean soil. The 48th Street and Holly Landfill was used to dispose of municipal wastes. In 1991, a methane gas collection system was constructed to address contamination at the landfill. Fewer than 25 people live within 1/2 mile of the site; however, hundreds of people work in the area.

Site Responsibility:

This site is being addressed through Federal and potentially responsible

parties' actions.

NPL LISTING HISTORY

Proposed Date: 12/30/82 Final Date: 09/08/83

Threats and Contaminants



The EPA conducted sampling at the site and found the soil and groundwater to be contaminated with volatile organic compounds (VOCs), pesticides, herbicides, and arsenic. People who accidentally touch or ingest contaminated groundwater or soil may suffer adverse health effects. In addition, people on site may be exposed by inhaling contaminated dust or vapors from the soil.

Cleanup Approach	
Response Action Status	

Initial Actions: In 1984, Colorado Organic Chemical removed waste drums and contaminated soil and fenced the area. In 1988, the EPA removed two tanks and five drums containing pesticides and solvents and transported them to federally-approved facilities. In addition, a synthetic cover was placed over the contaminated soil to prevent erosion and vapor emissions. In 1991 and 1992, the potentially responsible parties installed a methane gas extraction and treatment system at the 48th and Holly Landfill. This system has proven to be very effective in burning off gas and hazardous substances that are produced by decaying trash.

Colorado Organic Chemical Subsurface Soils and Structures: Cleanup activities began in 1990 with the demolition of contaminated tanks and buildings and the disposal of the debris and tank waste at a federally-approved facility. In 1993, an amendment to the 1989 remedy was approved to change the selected remedy for the surface soils from soil washing to low temperature thermal treatment (LTTT). LTTT is roughly half the cost of soil washing, and the soils are cleaner after processing through the LTTT system. LTTT heats the soil in a dryer to drive off the soil gas and VOCs. Cleanup of the Colorado Organic Chemical contamination in the surface soils, using LTTT, began in the spring 1994 and continued for approximately 6 months. After being processed, the 8,000 cubic yards of on-site soils treated in the LTTT were backfilled on-site. In addition to the LTTT treatment of the surface soils, the deeper soils are being cleaned by soil vapor extraction. The soil vapor extraction process began at the site in 1993 and was completed in mid-1994. Over 150 tons of contamination were extracted (vacuumed) from the deeper soils with this process.

L.C. Corporation Acids Pits: The acid contamination in the pits and surrounding soils is being addressed as a result of the fire of 1977. Prior to EPA action, the L.C. Corporation hauled and disposed of acid waste in pits, neutralized the acid and pit area with lime, and covered the seepage with clean soil. After completing its investigation of the acid pits, the EPA determined in 1993 that no additional action was required in this area.

48th Street and Holly Landfill: In 1992, an investigation was conducted to determine the extent of contamination and the risk associated with the contamination from the landfill. In 1992 and early 1993, a feasibility study was prepared to identify and evaluate alternative remedies for landfill contamination. The remedy was selected in early 1993, which includes continued operation of the landfill gas extraction system, installed in 1991 as a result of a fire, maintenance of surrounding fencing and landfill cap, and groundwater monitoring. The construction of the remedy was completed in 1994, and monitoring is expected to continue for another 10 to 20 years.



Groundwater: In 1993, the EPA completed extensive studies of the groundwater in the area to better determine the extent of groundwater contamination. A remedy was selected in the spring of 1994. EPA prepared the design for groundwater monitoring removal of the light non equacity phase liquid (LNAPL) that is floating on top of

and partial removal of the light non aqueous phase liquid (LNAPL) that is floating on top of groundwater in two localized areas. This LNAPL was removed by soil vapor extraction/dual vapor extraction in 1994. Quarterly long-term groundwater monitoring will continue to ensure the effectiveness of the remedy.

Site Facts: There is a new building being constructed on the site which is considered "Brownfields Redevelopment" in action. Brownfields Redevelopment saves pristine "greenfields" from development by putting previously contaminated properties back into industrial land use.

Environmental Progress



The construction of all remedies has been completed. The removal of drums and contaminated soil and the fencing of the area, as well as ongoing groundwater and soil treatment, has reduced the potential for exposure to contaminated materials at the Sand Creek Industrial site while cleanup activities are being completed.

SMELTERTOWN SITE COLORADO EPA ID# COD983769738

EPA REGION 8

Chaffee County Near Salida

Site Description

The Smeltertown site is located in a rural area northwest of Salida, Colorado on the eastern bank of the Arkansas River. The site encompasses 120 acres and has been impacted by three different industrial activities: smelting; woodtreating; and zinc sulfate manufacturing. A lead/zinc smelter was operated from the turn of the century until about 1920 on the site. During this period, hot slag was dumped along the banks of the Arkansas River. The slag still lines the eastern bank of the river. The smelter smokestack has been placed on the National Register of Historic Places. Beginning in 1925, wood treatment occurred at this site. Railroad ties and other lumber products were treated with creosote and possibly pentachlorophenol (PCP). These chemicals were allowed to drip on the ground after the lumber was treated. Creosote-contaminated soils were removed from the site in 1986 and 1992. The CoZinCo facility presently manufactures a zinc sulfate monohydrate by treating galvanizing wastes with sulfuric acid. Localized areas of contamination include several drum piles, sludge disposal and storage areas, and two wastewater lagoons. These sources of contamination are being addressed under a corrective action order issued by the State of Colorado.

Site Responsibility:

This site is being addressed through Federal and potentially responsible

parties' actions.

NPL LISTING HISTORY Proposed Date: 02/07/92

Threats and Contaminants



Contaminated soils and slag associated with the smelter operations contain elevated levels of arsenic, cadmium, copper, lead, manganese, and zinc. Soil is also contaminated with creosote and PCP from wood treatment. Groundwater is contaminated with zinc.

Cleanup Approach -

This site is being addressed in four stages: initial actions and three long-term remedial phases focusing on cleanup of the smelter, wood treatment, and CoZinCo areas.

Response Action Status Initial Actions: In 1993, several houses were provided bottled water in response to zinc contamination in residential wells. Soils contaminated with lead and creosote were removed from several residences. **Smelter:** The EPA completed its investigation of contamination derived from the historic smelter operations in the fall of 1994. Based on the results of the investigation, the EPA is planning to select a cleanup remedy in 1995. Wood Treatment: Beazer East, Inc. has begun a study to investigate the extent of contamination from the historic wood treating operations. The investigation is scheduled to be completed in 1995, at which time a remedy will be selected to address contamination. CoZinCo: An investigation into the nature and extent of contamination at the CoZinCo facility is underway and expected to be completed in 1995. Environmental Progress Providing bottled water to affected residences and removing contaminated soils have reduced the threat to human health and the environment while investigations continue and cleanup activities are planned. Site Repository

Town of Salida Public Library

SMUGGLER MOUNTAIN **COLORADO**

EPA ID# COD980806277

EPA REGION 8

Pitkin County the northeast corner of the City of Aspen

Site Description

The 116-acre Smuggler Mountain site is an inactive silver and lead mining site that was in operation from 1879 to 1918. Waste rock and mine tailings from mills and mines in the area have been deposited between the Roaring Fork River and the steep slope that forms the western side of Smuggler Mountain. Most of the mines are abandoned, but limited mineral exploration activities are still conducted on site. Tailings and mine wastes were mixed with native soil, and spread across the site. The total volume of mine waste material has been estimated at 1,300,000 cubic yards. In many cases, development in the Aspen area has taken place directly over waste piles, or mine waste has been dozed into mounds that remain as berms of contaminated soil. Contaminated soil has also been used as fill material in some areas. The site is situated in a residential area in the northeastern portion of the City of Aspen. The City has a year-round population of approximately 4,500, as well as a substantial number of seasonal visitors. The City of Aspen obtains its drinking water from the Roaring Fork River, approximately 1,000 feet downstream from the site.

Site Responsibility:

The site is being cleaned up through Federal, State and potentially responsible

parties' actions.

NPL LISTING HISTORY

Proposed Date: 10/15/84 Final Date: 06/01/86

Threats and Contaminants



Soil is contaminated with heavy metals including lead, cadmium, and arsenic. The potential health threats to area residents include accidentally ingesting contaminated surface soils or eating vegetables grown in contaminated soils. The Roaring Fork River is not contaminated by the site, and thus is not considered a potential health risk to the residents of Aspen.

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March 1995

Cleanup Approach
This site is being addressed in three stages: immediate actions and two long-term remedial phases focusing on cleanup of the residential areas and cleanup of the mine area.
Response Action Status
Immediate Actions: In 1985, a party potentially responsible for site contamination installed fencing around portions of the site and posted warning signs, as directed by the EPA. In 1990, EPA excavated, recontoured, and capped contaminated soil on two residential properties as a demonstration project.
Residential Areas: The remedy selected by EPA in 1993 was based on the recommendations of the Technical Advisory Committee and includes: capping and revegetating the highly contaminated berm area; covering, revegetating, and monitoring the common-use areas of exposed mine waste, including the Mollie Gibson Park; implementing a blood-lead surveillance program for young children using the Pitkin County Health Department; planting vegetable gardens in at least 12 inches of clean soil; and using the Aspen/Pitkin Environmental Health Department to evaluate site construction projects or land use changes to determine whether they present a threat of soil exposure to young children. The EPA will make a final determination regarding cleanup of residential soils based on the review of lead speciation studies that have been completed, on-going bioavailability studies, and results of the Pitkin County Health Department's blood lead and dust monitoring program. Cleanup activities are expected to be completed in late 1995.
Mine Area: The EPA is currently conducting an environmental engineering/cost evaluation to examine alternatives for addressing contamination in the mine area. The evaluation is expected to be completed in early 1996.
Site Facts: In 1985, the EPA issued three Administrative Orders to the potentially responsible parties. The orders required the property owners to notify the EPA of any plans to move soils or mining wastes on the site, to investigate site contamination, to recommend alternatives for final

mining wastes on the site, to investigate site contamination, to recommend alternatives for final cleanup, and to provide for the fencing and securing of a portion of the site to prevent public access.



Initial actions such as fencing portions of the site and excavating, removing, and capping contaminated soil in other areas have reduced the threat of direct contact with contaminants while additional cleanup activities are being planned.

SUMMITVILLE MINE COLORADO EPA ID# COD983778432

EPA REGION 8

Rio Grande County Del Norte

Site Description

The Summitville mine site is located in the San Juan Mountains of Colorado. The site, which covers 1,400 acres, is extremely remote, located at an elevation of over 11,000 feet above sea level, and usually accessible by vehicle only during the summer months. Mining operations began at the site in the late 1800s. In 1986, the most recent operator, Summitville Consolidated Mining Corp. Inc. (SCMCI) began open-pit mining and gold recovery operations through cyanide heap leaching. SCMCI originally designed the mining operation as a non-discharging wastewater facility. However, problems with discharges eventually compelled SCMCI to obtain a National Pollutant Discharge Elimination System (NPDES) permit from the State to operate a wastewater treatment plant. Throughout operations, several releases of water contaminated with cyanide and metals have occurred. The State has issued Notices of Violation to SCMCI for the unpermitted releases of contaminated water.

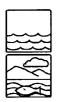
Site Responsibility: The site is being addressed through

Federal and State actions.

NPL LISTING HISTORY

Proposed Date: 05/10/93 Final Date: 05/31/94

Threats and Contaminants



Several releases of water contaminated with cyanide and metals have been documented. In the past, fish kills have been reported from Wightman Fork to the Terrace Reservoir, approximately 20 miles downstream from the site.

Cleanup Approach

This site is being addressed in four stages: initial actions and interim actions focusing on cleanup of the Cropsy Waste Pile and Beaver Mud Dump, the Heap Leach Pad, and the South Mountain and Minesite Reclamation areas.

Response Action Status



Initial Actions: The EPA currently is maintaining the site to ensure that 150 million gallons of contaminated water are not released into Wightman Fork, a tributary to the Alamosa River. This includes year-round operation of three retrofitted water

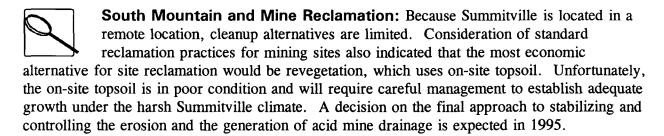
treatment plants to reduce contaminant levels in the water prior to its release from the site, or its use in stabilization activities. A time critical removal action was initiated in September 1993. During this action, the system which drains water from the historic underground mine workings was plugged. This action has flooded the mine workings and is expected to reduce production of the acidic, metal-contaminated water. This action is expected to be completed in 1995. In September 1993, a non-time critical removal action was initiated at the site to address the four areas primarily responsible for the generation of acid mine drainage: the Cropsy Waste Pile (CWP); Beaver Mud Dump; Summitville Dam Impoundment; and the Mine Pits. The response action was segregated into three phases, with each phase to be completed in a single construction season. The first phase moved approximately 1 million cubic yards of the CWP to the Mine Pits and was completed in early 1994. Phase II was initiated in the late summer of 1994 and removed the remainder of the CWP to the Mine Pits and excavated the tailings from the Summitville Dam Impoundment. Phase II was completed in early 1995 and included excavation of approximately 2½ million cubic yards of tailings. This action will further reduce the volume of contaminants generated from the site. The preliminary baseline ecological risk assessment is being conducted and is expected to be completed in 1995.



Cropsy Waste Pile and Beaver Mud Dump: After an investigation into the nature and extent of contamination at these areas, the EPA proposed to continue the Cropsy work and water treatment begun under the initial actions with little change in scope or direction. During the final phase of the CWP response action, the remainder of the

waste will be placed in the Mine Pits. A cap will be built over the waste placed in the Mine Pits that will reduce infiltration of water into the waste material and existing underground workings. Design of this interim remedy was begun in the fall of 1994 and is expected to be completed in 1995.

Heap Leach Pad: An investigation conducted by the EPA called for the detoxification and closure of the heap leach pad. Of the cleanup alternatives identified, it was determined that biotreatment to destroy the cyanide, accompanied with dewatering of the heap, followed by contouring and capping, provided the best overall longterm protection of human health and the environment. Design of these activities began in the fall of 1994 and is expected to be completed in 1995.



April 1995 2 SUMMITVILLE MINE Site Facts: The State of Colorado has issued several Notices of Violation to SCMCI. In 1992 SCMCI declared bankruptcy. As a result, the EPA has maintained the site using Superfund emergency funds.

Environmental Progress = -



The EPA is maintaining the site to ensure that no accidental releases of contaminated water occur while cleanup activities are planned.

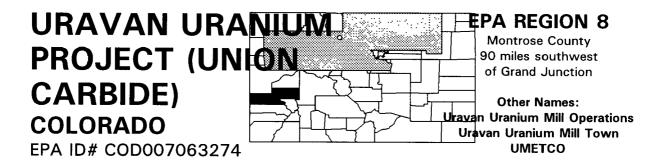
Site Repository



Del Norte Public Library 790 Grand Avenue Del Norte, CO 81132

Conejos County ASCS Office 15 Spruce Street, Box 255 LaJara, CO 81140

U.S. EPA Superfund Records Center 999 18th Street, Suite 500 Denver, CO 80202-2466



Site Description

The Uravan Uranium Project site began as a radium recovery plant in 1915. The plant was expanded to include vanadium recovery in 1935 and began this process in 1936. The plant operated from the late 1940s as a uranium processing facility. In 1984, Union Carbide formed a wholly-owned subsidiary, UMETCO, which operated the facility until it was closed. During the history of operations at the site, a large volume of waste products, including raffinates (liquid wastes from the uranium processing operations), mine tailings, and raffinate crystals from the various processes were disposed of on site. Radon gas emanates from the eroding tailings piles. Uravan is one of the more complex radiation sites in the country, with heavy metals, residual salts, and radionuclide contamination of groundwater and surface water. The Town of Uravan was established in 1935 to house the workers at the mill and mine facilities; the town no longer exists.

Site Responsibility:

This site is being addressed through Federal, State, and potentially responsible

parties' actions.

NPL LISTING HISTORY

Proposed Date: 10/15/84 Final Date: 06/10/86

Threats and Contaminants

Air at the site contains elevated levels of radon gas. Soil, groundwater, and the San Miguel River contain radionuclides and heavy metals. Before the town was evacuated and torn down, potential exposure to radionuclides posed a threat to human health.

Cleanup Approach

This site is being addressed in a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status -



Entire Site: The State completed a plan to clean up contamination at the site in 1986, and reached an agreement with Union Carbide regarding their performance of the cleanup actions. The remedy includes: reclaiming nearly 10 million cubic yards of

radioactive tailings by capping and revegetation; building a disposal system for radioactive crystals; placing 1½ million cubic yards of waste found along the San Miguel River in a secure disposal area; excavating contaminated soil and placing it in an approved landfill; and reclaiming and revegetating the land on the site. Most of the 10 million cubic yards of tailings have been placed in a secured disposal area and capped. Process pond water and seep water now are collected and evaporated in lined ponds. Approximately 400,000 cubic yards of pond crystals have been deposited in a clay-lined repository. Union Carbide has finished building two lined evaporation ponds adjacent to the State highway. The State installed pumps and is pumping the old, unlined tailings ponds for mill raffinate and sending the recovered wastewater to the new lined ponds. The State also is conducting radiation surveys of the old pond area to address issues that affect the health of workers on site before they dewater the raffinate crystals from the old ponds. The major elements of these activities are underway, and construction is scheduled to be completed by 1995, although the entire site cleanup will not be completed until after the year 2000.

Site Facts: The EPA entered into a Memorandum of Agreement (MOA) with the State in 1986 to avoid duplicating efforts. The MOA designated the State as the acting lead agency and required the State to consult with the EPA on all actions taken at the site. The MOA also provides for effective remedies to address site contamination. Although the cleanup activities have not been completed, the EPA conducted a five-year review in June 1994 to ensure the effectiveness of the remedies implemented thus far. UMETCO also has applied to the State for a permit to turn the site into a depository for off-site radioactive waste.

Environmental Progress



After adding this site to the NPL, the EPA performed preliminary investigations and determined that, because the town surrounding the site has been evacuated and torn down, no immediate actions were required at the Uravan Uranium site. Cleanup actions presently completed or underway will ensure the protectiveness of human health and the surrounding environment. The EPA's five-year review concluded that the cleanup is making excellent progress and that clean up standards are being achieved.

Site Repository



Colorado State Health Department, Radiation Control Division, 3773 Cherry Creek Drive North, Denver, CO 80231

WOODBURY CHEMICAL COMPANY COLORADO EPA ID# COD980667075

EPA REGION 8

Adams County Commerce City

Site Description

The 11-acre Woodbury Chemical Company site began operations in the 1950s as a pesticide formulation plant. The plant burned down in 1965, and the fire debris and rubble, including water-soaked bags of pesticides and contaminated soils, were moved to an adjacent lot. Over 1,500 pounds of pesticides were placed on the lot. The plant was rebuilt in the original location and continued operations until 1971. Various pesticides and volatile organic chemicals (VOCs) were produced or used on the site during its period of operation. The site is surrounded by industry, and approximately 3,000 people live within ½ mile of the site. Cleanup of the entire site was completed in mid-1992, and the site was deleted from the NPL in early 1993.

Site Responsibility: T

This site was addressed through Federal

and potentially responsible

parties' actions.

NPL LISTING HISTORY

Proposed Date: 07/23/82 Final Date: 09/08/83 Deleted: 3/22/93

Threats and Contaminants



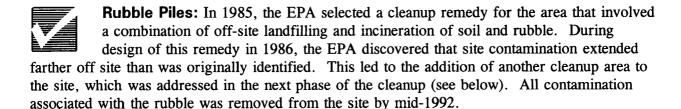
Sediments in a drainage ditch, surface water runoff, and soils on the site contained chlorinated pesticides and heavy metals. Prior to cleanup actions, potential health risks existed for individuals accidentally ingesting or touching contaminated soils or surface water.

Cleanup Approach

Response Action Status



Immediate Actions: In 1983, to prevent public access to the site and to help stabilize the contamination, the EPA posted warning signs, installed a fence around the site, and graded the site to prevent additional surface water runoff.



Soils: In 1989, the EPA selected a remedy for cleanup of the remainder of the site, which included off-site incineration of up to 2,000 cubic yards of highly contaminated soils and placement of 10,600 cubic yards of soils above the cleanup levels in an off-site, EPA-approved landfill. The design of the remedies began in 1990 and was completed in mid-1991. This work was conducted by the parties potentially responsible for the contamination, under EPA supervision. Cleanup of the site began in 1991 and was completed in mid-1992.

Site Facts: An Administrative Order on Consent was signed in 1987 between the EPA and the McKesson Corporation for the company to conduct an investigation into the contamination at the site and to identify alternative remedies for the cleanup. A Consent Decree was signed in 1990 between the EPA, McKesson Corporation, and Farmland Industries. This decree provided for the cleanup and recovery of past costs associated with the site study and cleanup design. A separate Consent Decree was completed in 1991 between the EPA and Maytag that provided for recovery of a portion of the past costs.

Environmental Progress



Cleanup of the entire site was completed in mid-1992. Contaminant concentrations throughout the site have been reduced to health-based levels for residential use. The site was deleted from the NPL on March 22, 1993.